



Southwest Region, Area 3 Integrated Roadside Vegetation Management Plan

2017



**Washington State
Department of Transportation**
Maintenance Operations Division

Introduction

The Washington State Department of Transportation's (WSDOT) Southwest Region Area 3 manages vegetation within approximately 215 miles of state highway corridor, primarily in Pacific and Wahkiakum Counties. Highways in the area are mostly rural and forested, with a number of small towns and associated semi-urban classification. All highways in the area are high in scenic quality, and tourism is a major component of the local economy. A map of the area is included as **Figure 1** on the following page.

The primary roadside vegetation management objectives are in relation to traffic safety and preservation of the highway infrastructure. Additionally, as a landowner WSDOT is required to control all listed noxious weeds that occur on the right-of-way by state law (RCW 17.10 and 15.15.010). It is important that WSDOT not only meet the legal requirements for weed control, but also consider the needs and concerns of adjacent landowners in this area.

In order to best manage roadsides with these priority objectives in mind, WSDOT practices an annually cycling process called Integrated Vegetation Management (IVM). Plans like this are maintained and updated annually for all areas of the state with an overall goal of establishing the most naturally self-sustaining roadsides vegetation possible. Adjustments are made year to year in each area plan based on monitoring the previous years' accomplishments and results, available budget, and prioritization of other highway maintenance activities.

This plan serves as the guidance document for vegetation maintenance in Southwest Region Area 3 for the 2017 growing season. It provides detailed treatment prescriptions for accomplishing safety and weed control objectives through the use of a combination of seasonally-timed control measures. Each year's actions are designed as part of a coordinated multi-year strategy to minimize roadside maintenance requirements wherever possible. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental issues, neighboring properties, local partnerships, or restoration work done through WSDOT design and construction.

Beginning with the 2017 season, the information contained in this plan document can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked through this new system. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing actions, monitoring and documenting results of treatments, and in measuring cost and results over time.

WSDOT welcomes input from local public and private entities on its weed control and vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan, cooperate, and partner with others in managing the roadside. Please direct any questions, comments or suggestions to the Southwest Region Area 3 Superintendent – Charley Hazen, or the State's Roadside Asset Manager – Ray Willard.

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SW Region, Area 3 Map
Figure 1

Southwest Region, Area 3 IVM Work Plan – 2017

The section outlines the overall approach and geographic distribution of roadside vegetation management requirements throughout the maintenance area in 2017. Information is organized in relation to three groups of activities defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions**, **Noxious Weed Control**, and **Nuisance Weed Control**. Specific locations as noted in this work plan are also mapped in the Highway Activity Tracking System (HATS) for reference by maintenance in the field.

Control of Vegetative Obstructions – 3A4

The work of this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered first priority in terms of the overall roadside maintenance needs. Vegetation management objectives and work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1**, **Safety Mowing/Zone 2**, **Tree and Brush Control/Zone 2 and 3**, and **Hazard Tree Removal/Zone 3**.

Pavement Edge Maintenance/Zone 1

Work Operation: 1615

HATS Form: Spray Zone 1

HATS Map Layer: Reference lines – Roadside Features/Spray Zone 1 Reference

This work includes the application of herbicides to road shoulders where necessary throughout the area. The objective of these applications in designated locations is preserving of a band of gravel shoulder adjacent to the pavement that is free of vegetation. This treatment is necessary in the mapped locations described below to provide visibility and maintainability of roadside hardware and guideposts, allow room for vehicles to safely pull off on shoulders, facilitate storm water drainage, and/or provide added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately **200 acres** of herbicide treatment to road shoulders throughout the area, this includes double treatment of shoulders in sections 445310 & 445320 as described below.

Locations of Planned Treatments

- Planned treatment sites are mapped in HATS layer – **Zone 1 Treatments**.
- All gravel shoulders throughout the area will be treated with a band of non-selective herbicides as described below.
- Locations where no bare ground treatment will be applied include:
 - Several small neighbor maintained areas are left untreated.

Treatment Methods

- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 3-foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 3 feet in areas with steeper shoulder slope.
- Treatment band width will be extended to the to the back side of hardware when present.
- The two sections in the area will be employing comparative treatment strategies as explained below:

445310

- All noted locations will be treated in mid to late spring with the following mixture of herbicides and adjuvants:
 - Esplanade @ 7 ozl/acre
 - Milestone @ 6 ozl/acre
 - Ranger Pro @ 64 ozl/acre

- Insist 90 @ 8 ozl/acre

445320

- All noted locations will be treated twice per year, in early spring and early summer, with the following mixture of herbicides and adjuvants:
 - Ranger Pro @ 64 ozl/acre
 - InPlace @ 8 ozl/acre

Safety Mowing/Zone 2

Work Operation: 1625

HATS Form: Mowing Zone 2

HATS Map Layer: Reference lines – Roadside Features/Mowing Zone 2 Reference

This work includes routine mechanical cutting of all vegetation on the road shoulder in a band width immediately adjacent to pavement. Mowing is necessary in areas where taller growing grasses or other vegetation are present and must be annually or semi-annually cut back for visibility and maintenance of roadside hardware and delineators, to maintenance traffic sight distance at curves and intersections, and for improved visibility of wildlife approaching the highway. Mowing height for these operations is typically 6 to 8 inches above the ground.

Total Units of Planned Treatment

- Approximately **265 acres** of safety mowing will be conducted throughout the area.

Locations of Planned Treatments

- All shoulders without guardrail present will typically be mowed once per year as needed prior to Zone 1 herbicide treatment and mowed one additional time per year in early summer where needed.

Treatment Methods

445310

- One pass mowing with double deck tractor-mounted flail mower, only using one deck in narrow locations

445320

- One pass mowing with single deck tractor-mounted flail mower.

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: Tree/Brush Control – Spray, Trimming Mechanical, Trimming Manual, and Mowing

HATS Map Layer: None

This includes safety and traffic operations related work in Zone 2, such as periodic side-trimming or pruning of brush and trees or tree branches behind guardrail, encroaching on or overhanging traffic operations, and/or impacting sign visibility. Also included is work in Zone 2 and 3 when selectively controlling emergent early succession tree species – to prevent them from growing into mature hazard trees within striking distance of the road.

Total Units of Planned Treatment

- Approximately **200 acres** will be treated with mechanical or manual tools throughout the area.
- Approximately **30 acres** will be treated with herbicides throughout the area

Locations of Planned Treatments

- Trimming/mowing behind guardrail as needed
- Side trimming encroaching branches and brush throughout the area as needed.
- Priority areas for treatment this year include:
 - SR105, MP 18.3-18.6 both directions – Use herbicide and mechanical tools for removal of cattails from ditch lines by agreement with Shoalwater Tribe.

Treatment Methods

- Side trimming with truck or tractor mounted cutting arms are used to periodically hedge back side growth in some areas, and to selectively cut off emerging undesirable tree species.
- Hand held cutting tools are used for more selective pruning and removal of vegetative growth where appropriate, including areas where high lift equipment is required to access overhanging branches.
- Herbicides are used to trim back growth and remove undesirable seedling tree species in some locations. Herbicide treatments for this purpose are made late in the growing season whenever possible. Herbicides mixtures used include:

Seedling Conifer and Deciduous:

- Garlon 3A @ 64 ozl/acre
- MSF @ 3 ozd/acre
- Syl-Tac @ 8 ozl/acre

Shoalwater Tribe Ditch Lines:

- Polaris @ 64 ozl/acre
- Agri-Dex @ 8 ozl/acre

Hazard Tree Removal/Zone 3

Work Operation: 1628

HATS Forms: Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Cleanup Fallen Trees

HATS Map Layer: None

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of trees exhibiting structural or health defects and identified as a potential imminent threat are removed as soon as possible.

Total Units of Planned Treatment

- There are typically between **200 and 250** mature hazard trees removed throughout the area each year.

Locations of Planned Treatments

- Crews are continuously looking for trees that exhibit structural defects and could strike the road or neighboring property if they come down. Any hazard trees identified at any time are removed as soon as possible.
- If trees growing outside WSDOT right of way are hazards, crews work with the neighboring property owner to negotiate removal.

Treatment Methods

- WSDOT crews typically fall hazard trees as needed
- Hand cutting with chainsaws, and high lift equipment as needed
- Leave material to decompose on site where possible

Noxious Weed Control – 3A2

This group of activities is focused on control of weed species and infestation locations identified in this plan document and mapped in HATS. The focus is on species that are legally designated in state and county regulations for required control by all property owners, along with any other identified and agreed upon species/locations that pose a unique threat to the roadside or surrounding environment if not controlled. Work under this group is considered second priority after safety related objectives have been addressed.

In some counties noxious weed laws may be enforced with fines and/or control work by the counties and billing of property owners – if adequate control is not accomplished. WSDOT communicates annually and throughout the season with each County Noxious Weed Board, to identify and prioritize treatment sites on state highways.

WSDOT employs three distinct strategies in planning and executing noxious weed control efforts. Any and all Class A species that occur on the right of way are treated as **Priority Noxious Weed Control**, and all maintenance actions are planned and tracked as individual, multi-year treatment sites. **General Noxious Weed Control** is planned and executed in one of two ways: 1.) Area-wide patrol and control operations are made in the early summer with a goal of spraying or pulling all visible target species prior to seed-set, and 2.) Early and late season treatments are planned for a set of prioritized and mapped infestation points where the goal is early detection/rapid response/eradication.

Priority Noxious Weed Control

Work Operations: 1616, 1618, 1641

HATS Point Feature-based Forms: Priority Infestation

HATS Map Layer: Feature points – Roadside Features/Noxious Weed Control Priority

These operations are directed at locations where Class A noxious weed species are present on the right of way and state law requires complete eradication. Site specific integrated treatment plans are developed for each identified location/species, and all control activities are recorded as point feature data in HATS. Ongoing operations will combine field monitoring and a mixture of seasonally timed treatment methods over a series of years. Sites must also be monitored for 3 to 5 years after control to check for grow back.

Species and Locations

- No Class A noxious weed species are known to exist on state right of way in Southwest Region, Area 3 at this time.

Locations of Planned Treatments

- If infestations are discovered, they will be recorded as features in HATS layer – **Noxious Weed Control Priority** for species location and distribution.

General Noxious Weed Control

Work Operations: 1616, 1618, 1699

HATS Forms: 4 sub-forms under Noxious Weed Control/General – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Biological

These operations are timed and carried out throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrate treatment plans combine field monitoring and a mixture of seasonally timed treatment methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation.

Designated Target Class B and C Species Known to Exist on WSDOT Right of Way in Southwest Region Area 3

Common Name/Botanical Name	Treatment Notes
Gorse/ <i>Ulex europaeus</i>	Planned treatment sites mapped in HATS
Knotweed sp./ <i>Polygonum sp.</i>	Planned treatment sites mapped in HATS
Ragwort tansy/ <i>Senecio jacobaea</i>	Occurs sporadically throughout the area. All visible plants are sprayed prior to bud/seed set, any remaining plants visible in flower are hand pulled with seed heads removed, bagged, and disposed of.
Scotch broom/ <i>Cytisus scoparius</i>	Controlled with annual spray where visible throughout the area. Annual mowing when present in Zone 2. Planned treatment sites mapped in HATS where established infestations exist in Zone 3.
Wild chervil/ <i>Anthriscus sylvestris</i>	Target sites mapped and treated in the spring

Total Units of Planned Treatment

- Approximately **25 acres** will be treated with herbicides.
- Approximately **5 acres** will be controlled by hand pulling

Locations of Planned Treatments

- SR103 MP 14-18 Gorse
- US101 MP 1-9 Scotchbroom, 21-29 Tansy
- SR4 MP 3-13 Tansy & Scotchbroom, 14-17 Scotchbroom, 30-32 Scotchbroom, and 48-50 Tansy& Scotchbroom.
- SR6 MP 27-28 Wild Chervil
- US 101 MP 46.9 Knotweed
- SR 105 MP 16-17.5 Scotchbroom

Treatment Methods and Timing

- SR 6 Wild Chervil herbicide application early Spring using Ranger Pro @ 48 oz./acre and Insist 90 @ 16 oz/acre
- US 101 Knotweed herbicide application late Summer using Polaris @ 64 oz./acre and Insist 90 @ 16 oz. / acre.
- SR 105 Scotchbroom herbicide application throughout Summer using Element 3A @ 128 oz./acre and Insist 90 @ 32 oz./ acre.
- SR 103 Gorse herbicide application, Spring using Element 3A @ 128 oz./acre, Escort XP @ 1 oz./acre, Insist 90 @ 32 oz./acre.
- US 101 & SR 4 Scotchbroom herbicide application Spring, using Element 3 A @ 128 oz./acre and Insist 90 @ 32 oz./acre.
- US 101 & SR 4 Tansy herbicide application using Element 3 A @ 128 oz./acre, Insist 90 @ 32oz./acre and pull by hand.

Nuisance Vegetation Control – 3A3

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the state. These locations are delineated on maps in HATS as polygon outlines in Zone 3. Locations are prioritized to take place where there is heightened local interest in the visual appearance and condition of the roadside vegetation. Typical locations include: wider areas along limited access freeways in urban and suburban areas, freeway interchanges for local urban centers, environmentally sensitive areas, and areas where neighbors are willing to partner with WSDOT on management efforts. Because nuisance weed control activities are not related to safety or legal requirements, and are primarily undertaken to improve the visual appearance of the roadside, they are considered the last priority vegetation management needs.

For all areas designated to receive Nuisance Vegetation Control, multi-year treatment plans have been developed. The actions contained in these plans will be executed and tracked in relation to specific Zone 3 polygons for **Nuisance Vegetation Control Zone 3**, referenced on HATS maps and described below.

Nuisance Vegetation Control

Work Operations: 1611, 1612, 1699

HATS Feature-based Forms: Herbicide Application, Manual/Mechanical, Biological, and Seed/Fertilize/Mulch

HATS Map Layer: Feature polygons – Roadside Features/Nuisance Vegetation Control Zone 3

Maintenance activities in each identified location are planned and tracked as multi-year treatment strategies utilizing monitoring and the most effective combination of control methods – with a goal of establishing desirable vegetation that requires only minimal maintenance. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation. In some cases, soil enhancements may be used as well as seeding or planting of beneficial competition species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations.

Total Units of Planned Treatment

- There is no nuisance weed control planned for Southwest Region Area 3 in 2017.